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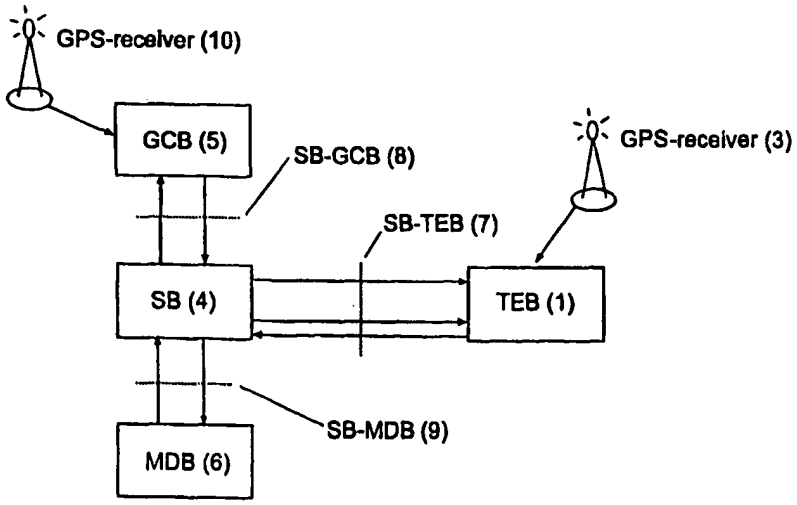

(57) Abstract

The invention describes a mobile information service that gives a user access to tailored and position adapted information. The information is adapted both to the user's position and according to special wishes regarding content of information. This is achieved by means of a www-technology, especially developed software for service logic, and software to distribute position information over Internet. The information is shown on one into two parts divided window on an ordinary portable computer, which is equipped with a GPS-receiver. The accuracy of the position information is improved by means of differential GPS, DGPS. One of the windows shows a map over the area where the user is. On the map are shown icons that indicate places of interest, cash dispensers, restaurants and traffic interchanges etc. If one clicks on one icon, there is in the other window shown information about the place, for instance menu for a near located restaurant. There also is possible to make personal adaptations, so that information is shown automatically when one is approaching a certain point. Warning information, such as traffic warnings, can automatically be shown when one is approaching an area.

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MOBILE INFORMATION SERVICE

TECHNICAL FIELD

The in the present invention described personal information service combines Internet technology, mobile communication, and an ordinary portable computer, with a GPS-receiver to a personal mobile information guide.

The information is shown on a window divided into two parts on the screen of the computer. One of the windows shows a map of the area where the user is. On the map are shown icons, which indicate places of interest, cash dispensers, restaurants, traffic interchanges etc. If one clicks on an icon, there is in the other window shown information about the place, for instance the menu of the day for a nearby restaurant. There also will be possibilities to make personal adaptations so that information is shown automatically when one is approaching a certain point.

Warning information such as traffic warnings can automatically be shown when one is approaching an area where, for instance, the roads are in a bad state, or there is a risk of game.

PRIOR ART

At a performed patent state investigation, the following documents have been found:

D1.	US,A	5 802 492
D2.	US,A	5 559 520
D3.	JP,A	10-185599
D4.	JP,A	09-311177

It is well known to utilise systems for geographical positioning, in the first place by utilisation of GPS. Such systems are i.a. included in the inventions according to the above indicated documents.

From document D1 there is known a system for planning of a car journey by means of a computer. The user makes choice of roads in order to visit interesting places along the road. The map is loaded from a CD. During the journey the user can see his/her position on the map, which is shown on the screen, at which places of interest are marked on the map and information is given about these places. A variant of the invention describes that one via a wireless interface can update the map during the journey.

It is also known how geographical information is transmitted to mobile users via radio (Document D2), or via e-mail (Document D3).

Document D4 describes a system where one is using Internet to transmit correction data from reference stations in order to improve the accuracy at positioning by means of GPS.

TECHNICAL PROBLEM

At journeys, information about the position is needed. Such position information can be obtained in different ways with different manual of automatic methods. It is, however, difficult to, on demand, get information about where one is, and at the same time get the information shown on a map. By utilising modern communication methods one can, according to this invention, get such information also during the journey, for instance shown on a portable computer that one carries with one at a car journey.

It also can be difficult, with the available support functions of today, to get sufficient accuracy of the position indication. Today existing solutions are using DGPS for correction of the position. To make these work, however, is required that a special receiver for correction data is utilised. The in the present invention described method can give a position indication with an error of less than 20 m.

To reach the destination of the journey, the user also need guiding about the further route. How to go to reach the destination can be uncertain, especially in a big city, where information about traffic flows, one-way streets etc can be important parameters to find a smart route. Also in other areas, support is needed to find the most suitable route.

When a traveller is in a place which is not well known, he/she needs to be informed about establishments that he/she needs to visit, such as department stores, shopping centres, restaurants, public authorities and organisations. He/she also needs information about these establishments in order to get answer to questions of the type:

* where is a do-it-yourself store that is selling goods of a certain make ?;

* which are the opening hours of the municipal executive office ?;

* where is the closest opened petrol station ?;

* etc

An activity based on business, need to market its services. To many activities, such as restaurants, hotels and places

of entertainment, travellers are an important target group. It is today difficult to distribute information about one's offerings to persons that just are arriving into a city. Advertisements in newpapers and telephone directory, or advertising pillars and display advertising, give a limited possibility to inform recently arrived travellers.

Advertising with fixed texts that will reach a large group of persons, for instance by advertisements, leaflets, signboards etc is a blunt way of distributing information. The same information is distributed to everybody, irrespective of needs and wishes. This is cumbersome both to those who want to distribute information, and to those who have to acquaint themselves with it. By directing the information, less amounts of information can be distributed, which results in that the receiver need not have to acquaint themselves with large amounts of uninteresting information. It will be much easier to get just that information one is needing. At the same time the cost to distribute the information will be limited by the amount of information to be exposed being smaller, but above all the "advertiser" will experience that the advertising will be considerably more efficient and in a better way lead the customers and clients right.

TECHNICAL SOLUTION

The invention that is described in this patent application, relates to a user-adapted, position-dependent, mobile information service, where the information is uniquely adapted to both the user's position and according to specific wishes regarding content of information. This is achieved by a combination of www-technology, especially developed client software in Java, especially developed software for service logic and software and technical

solution to distribute DGPS-data via the IP-protocol over Internet.

The user starts up the client program in his/her terminal, at which a map over the local surrounding is loaded down to the client. On the map is shown the user's position, corrected by means of a position correction function, for instance DGPS, which is also transmitted to the client over the data network. To this there is an information base connected with geographically coded (geo coded) information objects, which are shown as icons on the map. These information objects are shown by means of a browser, either automatically or after clicking with the mouse on the icon. The way of displaying can for instance be dependent on how far from these virtual objects the user is. Examples of information objects can be restaurants, road works, navigation information, cash dispensers, department stores, things worth seeing, and traffic interchanges etc.

The user sees the information in a window divided into two parts on the screen. One of the windows shows a map over the area where he/she is. On the map are shown icons, which indicate the information objects. If one clicks on an icon, information about the corresponding object is shown on the other window, for instance the menu of the day for a nearby restaurant. Alternatively, the information can be shown automatically when the user (actually the terminal) is approaching the restaurant.

A technical embodiment of a system for the invention includes terminal/client, service node in the capacity of a server, correction server for defining exactly the position indication, reference station, map database and database over information objects. The terminal contains positioning system (for instance GPS) and data communication (possibly mobile), and processor capacity to handle a browser. The

database over information objects consists of a database with position coded information.

ADVANTAGES

The invention describes a mobile information service that gives a user access to tailored and position-adapted information, irrespective of where he/she is. The only things needed are an ordinary personal computer, a mobile telephone and a GPS-receiver of standard type.

The user sets up a personal profile where he/she selects which information that shall be shown, so that it is adapted according to need and wishes. It can be anything from position adapted advertisement to traffic information (warning for elk trails, traffic accidents, roads in a bad state etc).

The invention gives possibility to manufacturers, public authorities and organisations to distribute advertisements and other information. The advertisement can be adapted to the user´s special profile.

Users can get access to the information service by subscription, and as an extension subscription the user can obtain possibility to get access to specific information. Alternatively, access to certain parts of the service can be obtained by separate order, or be given directly without order.

A solution according to the invention will be of great advantage to both the person utilising the information, and the one who has information to be distributed:

- Only standard components are needed for the user equipment (telephone (for instance mobile telephone), GPS-receiver, ordinary (for instance portable) computer, and access to Internet or a corresponding data network).

- The service is very easy to use - load a program and the service is accessible.

- All included parts communicate with TCP/IP, which makes it easy to distribute the system. It also makes it easy to rescale as market and needs are changing.

- The system is fully "non-autonomous", which means that the user need not have map data or other information or program stored in his/her terminal. All necessary data are transmitted over the network to the user, and by that the user will always have access to current information and current maps etc.

- Operation, the maintenance and further development of the service are facilitated by upgrading/updating and other changes being necessary to make in one place only.

- With the information service, data from differential GPS (DGPS) can be distributed over Internet and there is no extra receiver necessary for this.

- There is a possibility to utilise only the function differential GPS (correction of GPS-data, DGPS), which gives users who have map programs and digital maps a possibility to, in an easy way, get corrected position indication.

- The client function is developed in Java, which makes it platform independent, and that it therefore (possibly with certain adaptation) can be run on mobile terminals that support Java.

LIST OF FIGURES

Figure 1 shows an overview of functional blocks and interfaces.

Figure 2 shows an overview of the parts of the system.

Figure 3 shows how map and information are displayed to the user.

EXPLANATION OF TERMS

API	Application Program Interface. Interface in an application to access underlying network services. Acts as a "glue" between different programs.
GCB	GPS Correction Block. Block for GPS-correction.
GPS	Global Positioning System.
GSM	Global System for Mobile Communication. Cellular mobile telephone system.
HTML	Hypertext Mark-up Language. The page description language for documents in World Wide Web. Comprises directions for handling of typefaces, pictures and links to other documents. It is HTML

that makes it possible to click in documents in www and be "moved" to another document.

HTTP Hypertext Transfer Protocol. Program language on Internet. The protocol that constitutes the base for transmission of documents in World Wide Web.

IDB Database over information objects.

IP Internet Protocol. Protocol that is used in Internet.

ISP Internet Service Provider. Internet provider.

MDB Map Database Block. Map database.

RS Reference station for position correction in DGPS.

SB Server Block. Block for server functions.

TCP Transport Communication Protocol.

TEB Terminal Equipment Block. Block for user equipment, terminal unit.

DETAILED DESCRIPTION

The description below refers to the figures in the enclosed appendix of drawings.

GPS and DGPS

GPS is a system for position finding, and is functioning all over the world. By a GPS-receiver, anyone can receive satellite signals that give information about the user's position and speed.

By GPS (Global Positioning System) the users will have information about the position on land, at sea or in the air. Satellites that are circulating round the earth transmit radio signals that are received by GPS-receivers. The GPS-receiver then utilises the information to calculate position and speed.

GPS is built up of three main parts: Satellite part, control part and user part.

24 GPS-satellites are circulating round the earth of which 21 are used and three are reserve satellites that are at disposal if any of the regular satellites should fail. The satellites are in different orbits at an altitude of about 20 000 km, which is a remarkable altitude for satellites. By that, there are always at least four visible satellites, at any place on the earth. On board the satellites there are also, in addition to control and radio equipment, atomic clocks, which attend to that the time information that is transmitted is as accurate as possible.

The control part includes six control stations on the earth. These are utilised to detect errors, disturbances and above all to give basic data for correction of transmitted time information.

The user part consists of a GPS-receiver, which can be compared to an ordinary radio receiver with a computer and a clock.

The GPS-satellites transmit radio signals that contain information about

- identity of the satellite (satellite ID),
- the condition of the satellite (undamaged/damaged)
- the accurate position of the satellite
- the point of time when the signal has been transmitted

The signals are received by the user's receiver, which, by means of information from a multiple of different satellites, can calculate the distance to the satellites. With three satellites one will have two possible positions, only one of which being on the surface of the earth. Normally, there consequently are needed three satellites to make it possible for the receiver to give an unambiguous position indication. A fourth satellite is used to make it possible for the receiver to calculate the error in its built in clock and compensate for it. This is of outmost importance since even small errors can have fatal consequences for the position indication by the fact that the transmission time of the signals from the satellite is included in the calculation of the position.

DGPS, or differential GPS, has been developed in order to improve the accuracy at position indication. This can be achieved by utilising reference stations with accurately defined positions. The reference stations compare its known position with the position that is indicated by GPS-receiver at the station in order to calculate the error in the satellite signals. If the error exceeds a certain tolerance level, a correction signal is transmitted that is utilised by the DGPS-receivers in the area.

PREFERRED EMBODIMENT

The in the present invention described personal information service is built up as a client/server solution in a multiple of layers. To each server (20), a multiple of clients (21) can be connected, which results in that the system will be scalable. To the server the clients connect themselves, and all communication is going through this server.

The server in its turn is connected to a map database (22) and a database (23) containing current correction data. These correction data are updated continuously by the reference stations (24) that are connected. Further, there is an information database (26) with information that shall be shown about the different objects which have been indicated on the map. No information from the information service is stored in the client, but all information that is shown is taken from the server via Internet (25). This applies to maps as well as to the information objects that are shown on the maps. Also correction data are transmitted to the client via Internet. This results in that it always is current information that is transmitted to the user, and that the user can have varying information at different points of time.

The information is shown in a two-section window (30,31) on the screen of the client computer, at which one of the windows shows a map (30) over the area where the user is. Information that is connected to objects on the map is shown on the other window (31). These information pages are shown as ordinary html-pages. This makes it easy to create information pages and that no special programs are needed.

When a client is started up, it connects itself to a server that handles all communication with the client.

The position of the client is obtained by means of a GPS-receiver (26). By an ordinary GPS, one will have one's position indicated with an error of up to 100 m. This means that one in a city cannot be sure of in which block one is. By means of a correction system, such as differential GPS, DGPS, one can achieve a better accuracy.

By building a network of reference stations one collects reference data. These correction data are transmitted to the clients that forward them the GPS-receiver. In the GPS-receiver, the information then is utilised to create a more accurate position indication. According to the invention, correction data are transmitted via Internet, which results in that not extra equipment need to be connected, and no special subscription is needed for the correction.

Correction data are normally transmitted in a special format, RTCM, which is a standard protocol that is used for communication with GPS-receivers.

The functions of the information service are implemented in Java. It is for that reason very easy to change operating system and hardware for the different parts of the system.

All communication is executed by means of TCP/IP, which is used on Internet. This means that the parts need not be at the same physical place, and that it is easy to connect to the server.

Method of application

The user is equipped with a terminal (client computer, 1) with functionality for data communication (for instance GSM), positioning system (for instance GPS), operating system with support for WWW-browser (for instance an

ordinary portable computer) and access to Internet via a telephone, preferably mobile telephone, for instance GSM.

Necessary software for the positioning system shall be in operation at the client computer. The software can easily be taken into operation for instance by loading via Internet from the service provider's web-site and subsequent installation.

The user sets up a fixed or mobile connection to Internet by his/her Internet-provider (2). The client software reads the position from the GPS-receiver (3), transmits the position to the server block (SB, 4), which forwards the position to position correction, GCB(5). GCB decides which reference station (RS) that shall be used to correct the user's position. About seven RS´ are necessary to cover Sweden. Each RS handles client within a radius of 600 km.

SB registers for each user which RS that is best for the user just now. If the user moves so that another RS is more suited, the stored information about best RS is updated.

Correction data, which consist of propagation time error for the satellite reception for each reference station, are transmitted every 10th second to the client. The client software transmits this to the GPS-receiver via a standardised protocol (RTCM). The GPS-receiver calculates itself its exact position by means of correction data from RS, which gives an accuracy of about 15 m. Under favourable conditions and with optimal location of reference stations, the accuracy may be as good as 2 m.

The client software (TEB, 1) transmits the position information to SB (4), which from the map database (6) fetches right map picture in suitable picture coding format, for instance GIF-format, and transmits it to the

client. The client software continuously indicates the user's position on the map (once/second). Correction of the position is normally made every 10th second, but the interval can, when necessary, be adjusted to shorter or longer value. If GCB functions, and succeeds in transmitting correct correction information, the indication is green. If the correction cannot be made, the position is only indicated by means of the interpretation of position of the GPS-receiver (± 100 m), at which the indication becomes yellow. If reception of GPS-data is lacking completely, the indication will be red.

When the user reaches the edge of the picture of the map, the client transmits a new corrected position to SB, which arranges to transmit next picture of the map, on which the user's position then is indicated.

To SB there also is a database over information objects (IDB) connected. In the database there are information objects that are geographically encoded. Each time the client software requests a new map, SB checks the content in IDB and encloses information about which objects that shall be presented, and where on the picture of the map they shall be shown. The client software presents the icons for these objects on the picture of the map. The icons are in HTML-format and are collected by means of the http-protocol. This means that they can be anywhere in the network, and can be owned by anyone (for instance a restaurant, cash dispensers or the like). The icons can "be clicked" and refer to a web page on Internet. The content of the page, which is in HTML-format, is fetched by the httl-protocol. The web page, which the icon refers to, is shown on a window beside the map.

The client software also can be set to automatically fetch a certain web page when one is coming within a certain

distance from the object on the map. This means, for instance, that if one is driving a car and has set the client software to automatically show certain objects, one will automatically have information when one is approaching a place. In that way one will in good time be informed about when one is approaching a fork in the road, or a place one intends to visit.

TECHNICAL STRUCTURE

The invention can be described in four processes. The processes are realised by four functional blocks and three software interfaces (APIs) between these functional blocks.

Processes

The first process receives and corrects the position from the GPR of the terminal unit, and shows the position information on the terminal unit. This is performed in a continuous process.

In the second process, a new map is transferred to TEB. The process is activated when the map in TEB is of no interest any longer, or in another way unusable.

In the third process a position is received from the GPS of the reference station. Based on this received position information, a calculation is made of necessary correction, which is transferred to GCB. This is performed in a continuous process.

The fourth process includes transmission of the position correction to TEB. The interval for transmission is specified by TEB. This is performed in a continuous process.

Functional blocks

The server block (SB, 4) is the central unit from which the terminal units (TEB, 1) update their information. All communication between the functional blocks is going via SB routed through SB. The traffic is going via the following interfaces:

- API SB-TEB- for communication with TEB
- API SB-GCB- for communication with GCB
- API SB-MDB- for communication with MDB

The block for the terminal units (TEB) constitutes the user's man/machine system. Input and output data are transmitted to/from the user via the block. Connection to SB is made by the TCP/IP-protocol over GSM via the interface SB-TEB. A GPS-receiver (3) is connected to TEB to receive the position of the terminal unit.

The block for GPS-correction (GCB, 5) collects and provides the system with information about position correction from external units. GCB can handle a plurality of external units. Each unit receives the position information from a GPS-receiver (10) and calculates the position correction by knowledge of the real position. The block communicates with SB over the interface SB-GCB.

The block with map database (MDB, 6) contains the database. The maps are transmitted to SB based on information about position, scale and size. The communication with SB is made over the interface SB-MDB (9).

SCENARIOS

The traveller

As traveller in foreign places one often needs to use a map to find one's way. One also needs further information to find certain types of stores and places, for instance, restaurants, bus stops and things worth seeing. The traveller will have a current map over the area where he/she is, and information especially adapted according to the needs, for instance menu of the nearest restaurant, or the opening times for things worth seeing. The traveller also can have a description of roads to places to which he/she doesn't know the route. On the web-page there may also be links to further information such as description of the things worth seeing and references to other objects.

The seafarer

At sea it gives safety to have a good and current nautical chart over the area where one is sailing. A local sea weather forecast may also be important to have access to. This information can be received directly in the boat. Since the information is not stored in the client, but is fetched from Internet, it is always current. The seafarer never need to bother himself/herself about whether the nautical chart is obsolete or not. In addition to all ordinary information that is shown on the nautical chart, there also is information about where one can buy provisions. The ports even can receive an order for provisions before one arrives there.

Firm of haulage

A firm of haulage can get an order to deliver goods to different places that can be difficult to find even for

persons who know the district/locality well. It may be worth a lot to, in an easy way, indicate the customer's address and then receive a description of the route. For the firm of haulage it is important to deliver the goods fast, and then it is important to avoid traffic problems. Together with the description of the route, which is shown on the screen of the client computer, also information about traffic problems, if any, are shown. The route description can take this into account and show how traffic problems can be avoided.

The firm of haulage also can have an survey of the position of all trucks in order to in that way make it possible to plan the transports so that the trucks are utilised in the best possible way. Such a planning results in shorter and faster transports, which is an advantage to both the customers and all other traffic.

Road information

If the client computer is integrated with the car, and the screen is placed in the instrumentation of the car so that the driver can have a view of the shown information, the road safety can be increased. By including road signs as icons on the map, the icon as such, even without additional database information, can give an enhancement of the road and traffic information. The effect of road signs and other information such as signposts, marking of roads etc is further enhanced if information is also shown in the database window when the car is approaching the signpost.

Since the picture of the map and the database can be continuously updated, it is in this way also possible that police and the authority that are responsible for the road utilises this means to distribute urgent information about road conditions, traffic accidents, or other conditions

that influence accessibility and risks. There also is a possibility to apply icons that are invisible on the picture of the map, but which refer to the database information that is shown on the database window when the car is approaching the place. In that way one can distribute information to those who are passing an area, without needing to distribute information about an event to a wider circle.

FURTHER FUNCTIONS

Individual profiles

The user himself/herself can create individual profiles for the type of information that he/she wants to see on the map.

The scale of the map

The scale of the map is changed so that the user can have a survey over areas, but also see details in the neighbourhood of his/her position.

Footprints

The user has possibility to make "footprints", that is creating own information objects, which other users have possibility to see, for instance set a warning for elks.

Fleet management

A user can see where other users are. For instance a parent sees where his/her children is, or a taxi service sees where all the taxi-cabs are, and can send the nearest taxi to a customer.

Gula sidorna ("The yellow pages")

The user can make a search in different databases, for instance "the yellow pages", and have the result shown on a map, together with a route description.

Alternative positioning (position appointment)

The user can request showing of a map over another area than where he/she is. By indicating wanted position the user can have a picture of a map with possibility to appoint interesting objects in order to make it possible to plan a journey, or to make preparations, such as to make an order before a visit.

The invention is not limited to the above-described embodiments, but may in additions be subject to modifications within the frame of the following patent claims and the idea of invention.

PATENT CLAIMS

1. A system, for showing, on terminal equipment, user adapted position dependent information c h a r a c t e r i s e d in that communication is made over an open data network.

2. A system, as claimed in patent claim 1, c h a r a c t e r i s e d in that said open data network is Internet or other data network that utilises the IP-protocol.

3. A system, as claimed in patent claim 1, or 2, c h a r a c t e r i s e d in that the terminal equipment includes computer with communication possibility, device for appointing of position, and display system, for instance screen.

4. A system, as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that:

- said computer is a portable computer
- that communication is made via cellular mobile telecommunications system.

5. A system, as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that:

- the positioning system utilises GPS
- the accuracy of the positioning system is improved by means of differential GPS

6. A system, as claimed in patent claim 5,

c h a r a c t e r i s e d in that data, which have been created for differential GPS (DGPS), by means of basic data from a network of reference stations, are distributed over Internet, so there is no extra receiver needed for this.

7. A system, as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that the error in the position information of the positioning system is less than 20 m.

8. A system, as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that position information can be indicated by the user.

9. A system, as claimed in any of the patent claims 3 to 8, c h a r a c t e r i s e d in that the information is shown in two views, one of which shows a map over the area around said appointed position, with said appointed position marked, and that information about selected objects are shown in the other view.

10. A system, as claimed in patent claim 9, c h a r a c t e r i s e d in that the views are shown in separate windows on the display unit of the terminal equipment.

11. A system, as claimed in the patent claim 9 or 10, c h a r a c t e r i s e d in that objects, for which further information can be shown, are identified on said map, and that said information is shown on the terminal equipment after marking with pick device.

12. A system as claimed in patent claim 11, c h a r a c t e r i s e d in that said identification of object is made by icons, and that said icons and said

information, which is shown, can be anywhere in the network, and be owned by anybody.

13. A system, as claimed in patent claim 12, c h a r a c t e r i s e d in that said icons and said information that is shown are written in the HTML-language and are fetched by the HTTP-protocol.

14. A system, as claimed in any of the patent claims 9 to 13, c h a r a c t e r i s e d in that, when the geographical distance between said appointed position and an object, for which further information can be shown, is less than a predefined value, information regarding said object is shown on the terminal equipment.

15. A system, as claimed in any of the patent claims 9 to 14, c h a r a c t e r i s e d in that the client software continuously updates said appointed position.

16. A system, as claimed in any of the patent claims 3 to 15, c h a r a c t e r i s e d in a combination of www-technology, platform independent client software, software for service logic, and software and technical solution to distribute data for position correction via the IP-protocol over Internet.

17. A system, as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that client software is written in Java.

18. A system, as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that the user can set up a personal profile over which information that shall be shown.

19. A system as claimed in any of the previous patent

claims, c h a r a c t e r i s e d in that all included units communicate by TCP/IP.

20. A system, as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that changes and other measures for operation, the maintenance and further development of the service only need to be made in one place.

21. A system, as claimed in any of the previous patent claims, c h a r a c t e r i s e d in that necessary data are transmitted over the network to the user terminal, which means that neither map data, nor other information, are stored in the terminal equipment.

22. A system, as claimed in any of the previous patent claims, c h a r a c t e r i s e d in a client/server solution in several layers where a multiple of clients (21) can be connected to each server (20), to make the system scalable, and where all communication is going via the server.

23. A system, as claimed in patent claim 22, c h a r a c t e r i s e d in that the server is connected to a map database (22), a database (23) containing current data for position correction, and information database (26) with information that shall be shown about objects.

24. A system, as claimed in patent claim 23, c h a r a c t e r i s e d in that information objects in said information database are geographically encoded, and that each time a new map is transmitted to terminal equipment, information is enclosed about which objects that shall be shown, and where on the picture of the map they shall be shown.

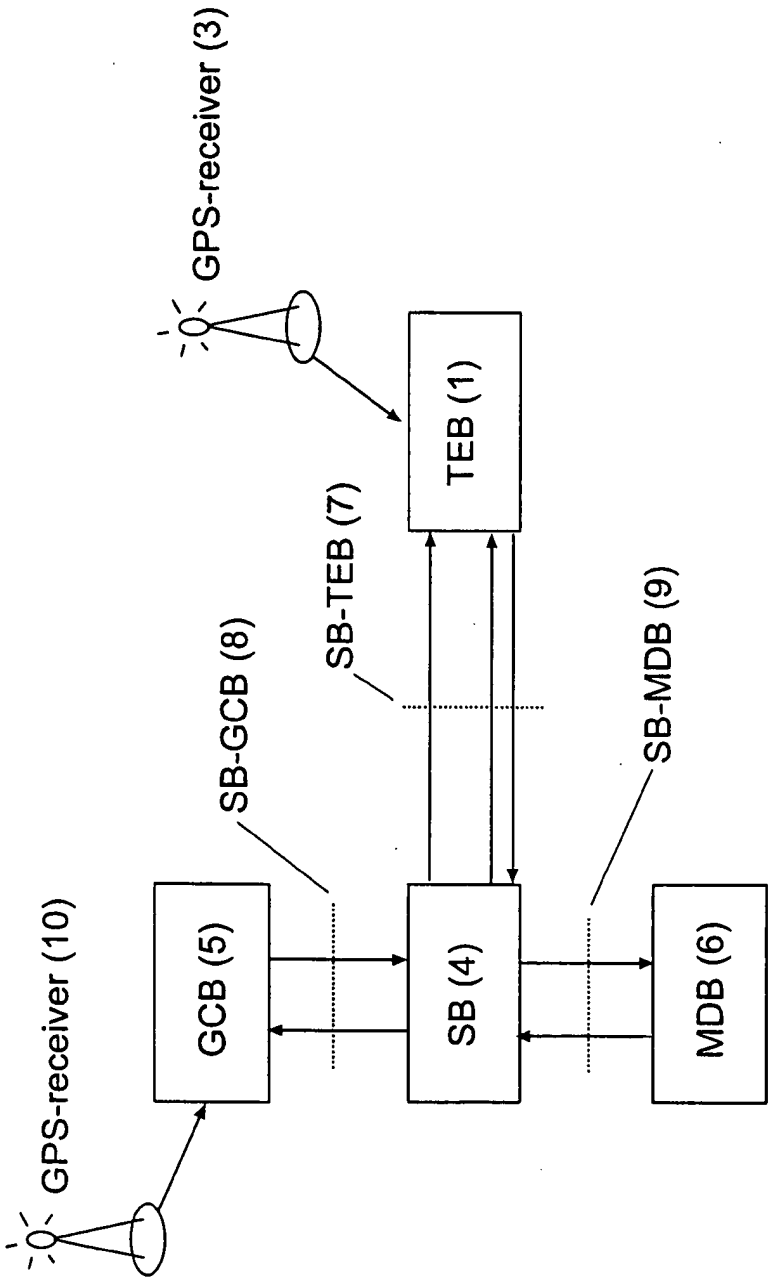
GPS-receiver (3)
TEB (1)
SB-TEB (7)
SB-GCB (8)
SB-MDB (9)
GPS-receiver (10)
GCB (5)
SB (4)
MDB (6)

Figure 1

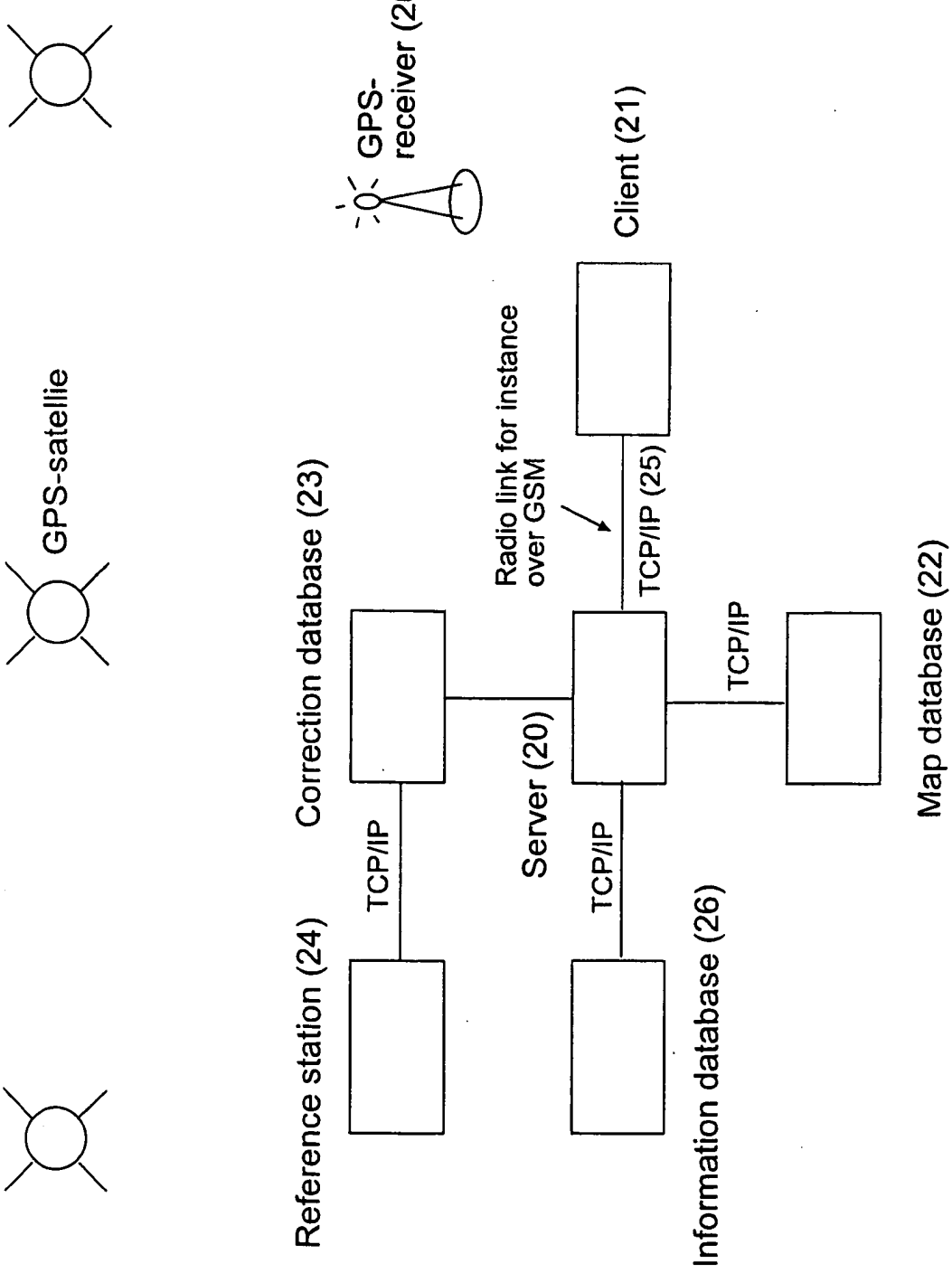
GPS-satellie
GPS-satellie
GPS-satellie
GPS-receiver (26)
Client (21)
Radio link for instance over GSM
TCP/IP (25)
Correction database (23)
Server (20)
TCP/IP
TCP/IP
TCP/IP
Reference station (24)
Information database (26)
Map database (22)

Figure 2

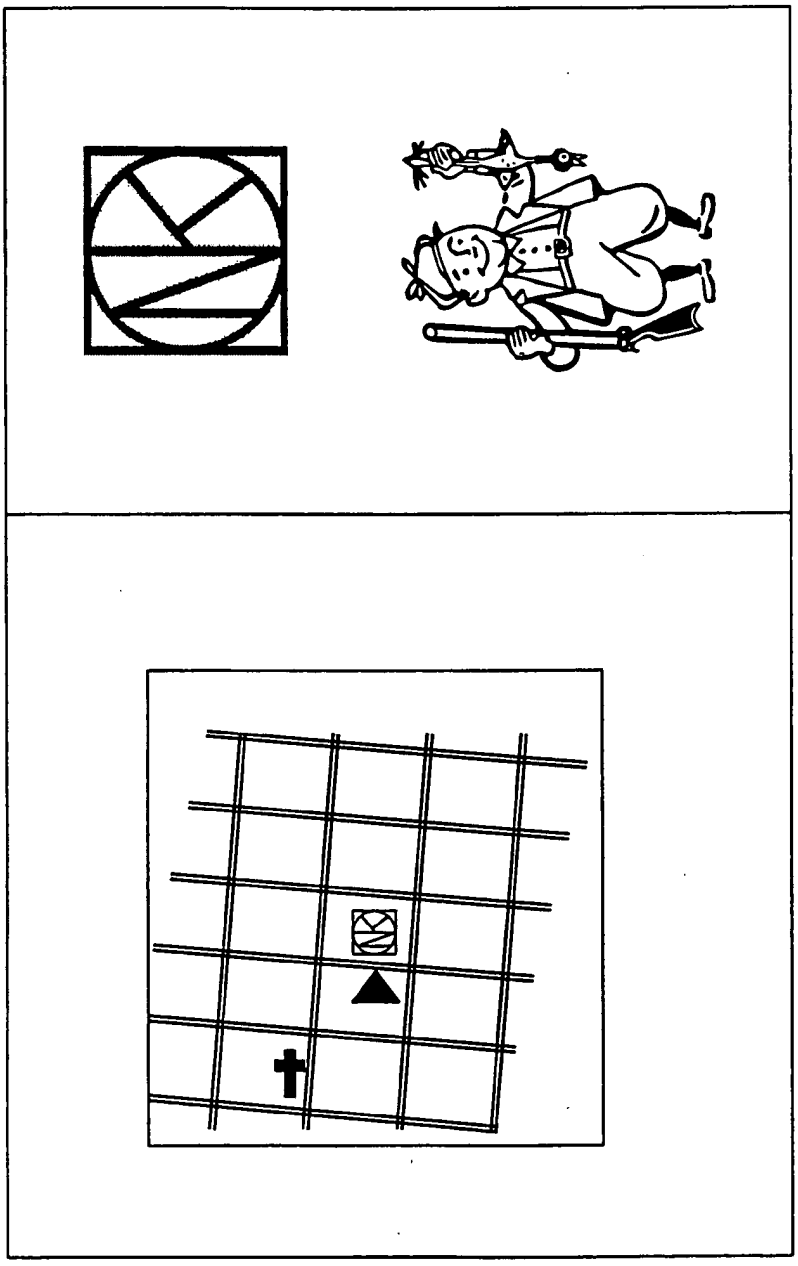

Figure 3